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PATENT APPLICATION
Attorney Docket No. Q48849

GP 1733

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

EH
9-15-00

In re application of

Yasuo HIMURO

Appln. No.: 08/997,368

Group Art Unit: 1733

Filed: December 23, 1997

Examiner: S. MAKI

For: PNEUMATIC RADIAL TIRE FOR ALL-SEASON PASSENGER CAR

REPLY BRIEF PURSUANT TO 37 C.F.R. § 1.193(b)

Assistant Commissioner for Patents
Washington, D.C. 20231

#15 Reply Brief
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Sir:

In accordance with the provisions of 37 C.F.R. § 1.193(b), Appellant respectfully submits this Reply Brief to address points raised by the Examiner's Answer of June 29, 2000. Entry of this Reply Brief is respectfully requested.

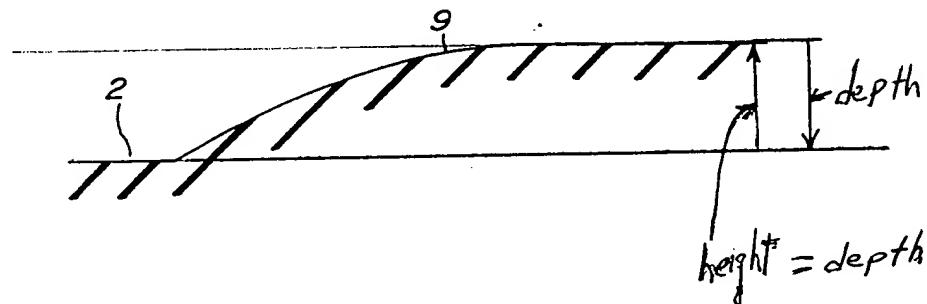
I. REPLY TO COMMENTS RE: SUMMARY OF INVENTION

The Examiner takes issue with Applicant's description of the invention with respect to y describing the chamfer (Answer, page 2). The Examiner's criticism is not well founded. It represents a narrow and flawed analysis of this invention. In essence, the Examiner contends that the use of the word "height" as opposed to "depth" confuses the description of the invention. The Examiner is simply incorrect. First, there can be no doubt that the artisan would clearly recognize that the cross-sectional dimension of a block whether defined as height measured from a groove bottom to the upper surface of the block at the tread surface or depth measured from the

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tread surface of the block to the groove is the same. For example, reference is made to U.S. Patent 5,609,699 and Figure 2. This is prior art of record reproduced below. As clearly seen in that cross-section, there is no debate that it shows a decreasing surface height in a tapered zone of the block (see column 2, lines 67-68). The land zone 9 is defined between the grooves 2. The height is nothing more than the distance from the groove 2 bottom to the upper surface of the block. That is a consistent definition well understood by the artisan, used in both the prior art and here. The Examiner's criticism is nothing more than wordsmithing without any substantive import.

FIG-2



To demonstrate this equality in a colloquial manner consider, two tourists attempting to describe the height of the Grand Canyon from the Colorado River. One, at the rim, would describe it as depth looking down from the rim to river. A person on a raft trip looking up from the Colorado River would describe the height from the water up to the rim. The dimension is exactly the same. Applicant's definition is thus consistent with the specification and the Examiner's criticism is of no substantive import.



II. RESPONSE TO EXAMINER'S CONTENTIONS
RE: OBVIOUSNESS UNDER 35 U.S.C. § 103

The Examiner's rejection of claims 1-10 relying on three primary references and optionally two secondary references and the Answer to Appellants brief contains three fundamental errors:

1. The Examiner does not consider the scope and content of the prior art as a whole as required under 35 U.S.C. § 103. The Examiner focuses on only those portions of interest to him, failing to consider the remainder of the disclosure in the prior art that cuts against any selective modification of the reference.
2. The Examiner dissects the claims into component elements and then assess the alleged interchangeability of the claim components with those found in a myriad of prior art. For each, different and conflicting motivations are ascribed. The Examiner thus never considers the issue of obviousness based on the subject matter a whole as required by the statute. Stated differently, the issue of obviousness is not decided element by element based on a minute dissection of the claims. Rather, the issue is would the subject matter as a whole have been obvious to a person of ordinary skill in the art (See *In Re Dembicza*k, 175F. 3d 994, 998; 50 USPQ 2d 1614, 1616 Fed. Cir. 1999).
3. The Examiner does not answer the arguments presented. A careful review of the points raised reveals a series of circular arguments that never address the reasons presented demonstrating why the proposed serial modifications of the prior art are untenable. Simply put, the Examiner never rebuts Appellant's analysis and reasoning but contends, albeit incorrectly, that the prior art contains ample motivation for piecemeal modification.

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As is evident from the prior art, this invention represents the combination of old elements, that is a tread pattern for a tire comprising slanted grooves which divide the tread surface into blocks, sipes formed on the blocks and tapering of the block surfaces to form a chamfer. This case thus falls squarely into the model defined by the Federal Circuit *In Re Rouffet*, 149F. 3d 1350, 1357; 47 USPQ 2d 1453, 1457 (Fed. Cir. 1998). Thus, every element of a claimed invention may often be found in the prior art. That is not enough. The critical point however, is that the identification in the prior art of each individual part claimed is insufficient to defeat patentability of the claimed invention considered in its entirety.. Rather, to establish obviousness based on a combination of the elements disclosed in the prior art, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the Applicant. The specific combination is not a sub-combination of individual elements, but rather the combination as a whole. The holding in *Rouffet* follows a long line of Federal Circuit decisions requiring adherence to that principle under 35 U.S.C. § 103 (See *In Re Dance*, 160F. 3d 1339, 1343; 48 USPQ 2d 1635, 1637 (Fed. Cir. 1998); *In Re Gordon*, 733F. 2d 900, 902; 221 USPQ 1125, 1127 (Fed. Cir. 1984). Thus, it is incorrect to establish obviousness based on the alleged obviousness of individual elements. That however is exactly the route followed here by the Examiner.

Moreover, in determining patentability of the combination as a whole, the modifications of the prior art must be from the perspective of one of ordinary skill guided only by the prior art references and the then-accepted wisdom of the field (see *In Re Dembiczaik*, 175F. 3d 994, 999 50 USPQ 2d 1614, 1617 Fed. Cir. 1999).

The test then for an implicit showing of obviousness is what the combined teachings, given the knowledge imbued to one of ordinary skill in the art and the nature of the problem to

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be solved as a whole would have suggested to that artisan (See *In Re Keller*, 642 F. 2d 413, 425; 208 USPQ 871, 881 (CCPA 1981). These cases and the well annunciated principles provide a methodology of analysis that establishes a wall between that which is found in the prior art and that which is taught by the Applicant. The purpose is to avoid a construction of the prior art and its modifications predicated on hindsight. The Federal Circuit has emphasized this point in *In Re Kotzab*, 55 USPQ 2d 1313 (Fed. Cir. 2000). (“close adherence to this methodology is especially important in cases where the very ease with which the invention can be understood may prompt one to fall victim to the insidious effect of a hindsight syndrome when that which was only the invention taught is used against its teacher.” (Id. at 1316).

It is against this back drop that the Examiner’s analysis is deficient as a matter of law by not considering the claims as defining in their individual context a one invention, and not a “tool box” of components that can be individually used and replaced at will. Here the Examiner has utilized the subsections of the claims themselves as a guide through which the prior art itself is screened for matching components. The individual components are then assessed relative to their identity and thus obviousness with respect to the prior art. That approach is twice flawed.

On page 13, the Examiner provides a drawing taken from EP ‘718 which is identical to the drawing in the ‘699 patent reproduced here . The Examiner defines the depth of the block surface as taken from an extension of the tread surface or an imaginary line. Notably lacking however, is any indication of depth equaling height both in the zone of the chamfer and to the untapered block surface as measured from the actual land surface. Again, the ‘699 patent in referring to the same drawing defines it as one “illustrating a decreasing form of surface height in a tapered zone of a land portion”. That alone should address the demonstrate the equality of

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height versus depth based on the same cross-sectional dimension – it is consistent with the prior art and not the Examiner’s interpretation..

The Examiner matches up claim 1 relative to EP ‘332 recognizing that the claim defines five separate criteria. Buried in the Examiner’s analysis on page 9 is a brief admission that criteria 5 is not in any way disclosed in EP ‘332.

At this point, the Examiner’s analysis goes astray. First, the Examiner considers only the similarities but does not fully disclose the scope and content of EP ‘332 which compels that the modification he opined to be obvious would not be made by the artisan. Specifically he does not recognize the reason there is no chamfering of any block. Secondly, the Examiner then focuses only on criteria 5 of the claim in his analysis of obviousness while not considering how that criteria must be matched to the other four, that is the claim as a whole. This provides a first basis upon which the rejection is deficient and should be reversed.

**(a) EP ‘332 Has No Need Or Basis For Chamfering Of The Block Defined
By Center And Steeply Slant Grooves**

In contrast to Applicant’s claimed invention or that of EP ‘718, the pattern in EP ‘332 is not directional. EP ‘718 shows all of the steeply slant grooves facing in the direction of rotation denoted by the arrow D on the right-hand side of Figure 1. Thus, each of the blocks faces in the same direction as they slant deeply toward the circumferential center line CC.

The result then is as the tire rotates the tips of the blocks which are chamfered are all presented in the same direction and orientation on both sides of the tread. That is for a tread divided along the circumferential centerline, the tapered faces of the blocks all face in the same

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direction **on both sides**. This symmetry allows even wear and dynamic properties on both sides of the tread pattern.

EP '332 does not disclose any chamfering of the block defined by the center groove and the steeply slant grooves for the fundamental reason that the tire pattern is not directional on both sides of the center line X-X. The acute angle corners are each side are not presented to the ground in a symmetrical manner as the tire rotates. There is simply no reason to chamfer only certain corners of the blocks given this fundamental difference. Those corners, consistent with the Examiner's analysis would be identified by the shaded area of the drawing of Figure 1 which is attached herewith as Appendix I. These are the blocks having the angle α which the Examiner defines as the corner between the steeply slanted portion of the groove 13 and the circumferential groove 11. The Examiner on page 7 of the Answer states "at this opening, block 7 has an acute angle corner portion" (Answer, page 7). The Examiner is correct but does not go far enough in the description of the tread pattern. More pertinent is that those acute angle portions relative to the circumferential center line face in opposite directions on opposite sides of the tire.

Consequently, EP '332 does not chamfer those corners for an obvious reason that depending on the tire direction, blocks on one side of the tread pattern would have the chamfered portion of the block presented first and then the flat block tread contact area while those on the opposite side would have the flat tread block surface presented first followed by an area where the chamfer occurs. The result obviously would be the entrapment of air or water on one side of the block which would totally destroy the concept of a low rolling noise tire.(See '332 Col 1:52-Col.2: 3) It is well understood from the prior art as a whole that the modification suggested by the Examiner would **increase** pattern noise. (See: '685, p. 1: 19-25). The Examiner never addresses these points which are plain from the teachings of the prior art..

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The artisan would first obviously recognize from EP '332 the lack of this directionality. Before going further and determining the function of various components, the goal of achieving a quiet tire would be considered from that perspective. The total inability to achieve that goal of the '332 patent if the blocks were chamfered in the acute angle portions would be instantly understood. Moreover, the introduction of abnormal wear would not be lost on the artisan given the uneven distribution of ground contact pressure.(See: '685 p. 1: 26-30).

This critical distinction between directional tire patterns represented by this invention in EP '718 and those which are non-directional represented by EP '332 condemns the Examiner's conclusion concerning chamfering of the blocks in a non-directional pattern represented by EP '332. The prior art itself recognizes this difference. (See: '718, p. 1: 6-8)

The five prior art references cited by the Examiner divide logically into those patterns which are directional and those which are not. Directional patterns are illustrated in EP '718, EP '685 and JP '025. Non-directional patterns are set forth in EP '332 and JP '215. JP '025, like EP '718 shows chamfering at the tips of the blocks in the directional tread pattern. JP '215 which aligns with EP '332 shows no chamfering whatsoever in the various tread patterns disclosed. The reasoning is as set forth above.

The prior art when thus considered as a whole, which it must, would therefore contain the fundamental recognition that a pattern such as EP '332 would not chamfer acute angle portions of the blocks because when such was uniformly done on both sides of the circumferential center line abnormal wear and excess noise would result. For those readily apparent reasons, the prior art does not chamfer the block portions of those tread patterns and the Examiner's analysis cannot stand muster. It clearly fails to recognize the scope and content of the prior art, when considered in its entirety but rather strikes out on a contrary and technically defective route.

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The Examiner's conclusion that EP '718 and JP '025 "motivate one of ordinary skill in the art to chamfer an acute angle corner of a block near the equatorial plane of the tire which is steeply defined by a steeply slant groove and a circumferential groove..." (Answer, pages 15-16) is clearly wrong. That conclusion and the analysis that proceeds it on pages 13-15 does not pay the slightest lip service to the teachings of the references as a whole in terms of the tread patterns which are defined. Never once does the Examiner face up to the fundamental recognition between directional and non-directional tread patterns and differences in construction that flow from those divisible tread patterns. Indeed, as referenced, the prior art itself recognizes the problem of reducing tread noise but the Examiner, attempting to reconstruct the tread pattern in appellants own image would only exacerbate the problem. In the Examiner's view, the mere fact that an acute angle is defined on some tread pattern, albeit facing in opposite directions across from each other in the tread pattern is of no consequence. However, it would be critically relevant to the artisan and the prior art itself is considered in terms of how those edges are treated.

This conclusion is more than amply confirmed by considering the disclosure in EP '332 beginning at column 9 at line 29. There, the prior art explains how noise is created as a function of ground contact pressure and importantly "another contributory factor in generating rubbing is represented by the acceleration undergone by block 7 during the contact and separation steps with and from the contact area. As the value of such accelerations is a function of the square radius according to which block 7 are distributed about the tire axis, the blocks closer to the equatorial plane X-X are those that undergo the greatest acceleration in that the tread 1, as known, has a convex outer profile see in cross-section" (column 9, line 56 to column 10, line 5). Importantly then, the reference states specifically that to alleviate the tendency of rubbing by

those blocks, the blocks are given “a greater longitudinal stiffness resulting from the bigger size of the latter”. The chamfering which the Examiner opines to be obvious would create a differential longitudinal stiffness in those same blocks. At the same time, it would defeat the other function of having the reduced angle α which is to smooth the impact of the blocks onto the ground “exactly at the areas on which the outer noise mostly depends” (column 10, lines 26-30). The effect of chamfering the edges on one side would defeat the acute angle by in essence reducing its effective size of the block at the ground contact point. That is, the chamfering argued by the Examiner to be obvious would effectively increase the angle because the point of contact with the ground would be at a point of greater block width. The chamfered tip would not always contact the ground.

All of these reasons would not be lost by the artisan as a sound basis to conclude that chamfering of the blocks of the EP '332 pattern would be not only distinctly well beyond the scope of the teaching of that reference but one which would destroy the very effectiveness of the tread pattern defined by that reference to reduce noise. Cutting off the tips by chamfering would be simply destructive of that pattern itself and provide none of the benefits which the Examiner opines would logically follow.

(b) The Use of Sipes on All of the Blocks is Not an Obvious Modification of EP '332

The Examiner again misconstrues the scope and content of the prior art and indeed that of the primary reference used as a starting point, EP '332. The Examiner in the statement of rejection defines the requirement of sipes as “reads on cut 10a having a width of less than 1 mm as described in EP '332” (Rejection, page 8). True, however, cut 10a does not appear in any of the blocks 7. The obvious disconnect then is that the Examiner, while focusing on chamfering of

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the block 7 uses only a portion of the tread pattern in EP '332. The Examiner does not link the requirement of the claims that the same block must have both chamfering and also a sipe.

The blocks 7 in EP '332 , relied upon by the Examiner fail on both accounts. They are neither chamfered nor do they have any sipes.

The Appellant demonstrated why chamfering of those blocks would be a distinctly backward step. The Examiner's definition of the scope and content of the EP '332 reference again fails to recognize that what he construes to be a sipe exists in a block which is not in any way bounded by steeply slanted grooves or a circumferential center groove. Rather sipes are placed blocks 6 in the shoulder portion of the tire. The sipes are placed in that region of the tire and not in the steeply inclined block 7 for distinct reasons set forth in EP '332, all of which have been disregarded by the Examiner.

The analysis on page 16 is a study in obscuring the issues by failing to meet the contentions of non-obviousness head on based on full and fair consideration of the prior art. For example, the Examiner states "Applicant provides no reason as to why claim 1 requires sipes in blocks other than 'blocks in said side zones' such as blocks in row 6 of EP '332". Claim 1 provides the answer by defining the tread pattern as "dividing the tread into many blocks" and then setting forth the requirement "each of the blocks is provided with at least one sipe". The requirement "each of the blocks" is straight forward and the plain meaning is that every block has a sipe. These are the blocks not only in the side zones, but also those in the central zone of the tire. "Each of the blocks" is clear and unambiguous. The Examiner's reasoning on page 16 as to the "first" basis thus fails because it does not take the claim based on its unambiguous requirement for sipes in the very zone of interest that led the Examiner to zero in on blocks 7 in the reference.

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But that same myopia leads to a contradiction on the part of the Examiner: a failure to recognize the EP '332 provides sipes only in the side zone 6 and not in blocks 7, while at the same time the steadfastly refusing to admit that the blocks in question for which claim 1 deals in its entirety are those in the central zone must also have sipes. The Examiner cannot have it both ways, misinterpretation of the claim and a misconstruction of the prior art and still prevail here. EP '332 cannot fairly stand for the proposition that blocks in the central zone which the Examiner has already conceded to be only blocks 7 contain any sipes. Clearly, they do not. Again, the reasoning why sipes are not provided in those blocks 7 is amply set forth in EP '332 which the Examiner does not consider. The primary reference utilizes the narrow cut 10a as a mechanism to connect the transverse groove 10b with the circumferential groove 2 a specific purpose, "substantially doubles the number of blocks 7a, 7b already defined therein by the presence of first and second cuts 8, 9 (column 8, lines 9-12). This simply takes a large block 7 in the shoulder row 6 and carves it into two smaller blocks thereby effectively increasing the number of blocks. That technique of taking a larger block and reducing it into a multiplicity of smaller blocks is directly contrary to how the blocks 7 in the circumferential row 3 are treated. The reference states unambiguously that in that portion of the tread pattern the blocks are made larger (see column 10, lines 6-14). The Examiner simply ignores this critical point.

Stated again, the '332 reference purposefully makes the block 7 in the center rows 3 and 4 larger to increase their longitudinal stiffness. This is unambiguously stated in column 10, lines 9-11. Sipes are thus purposefully not provided in those blocks so that the longitudinal stiffness is maintained. Sipes reduce rigidity to improve ground contact properties of a land portion. (See '718 p.4:7-9). They are not used willy-nilly, but in considered applications.

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In the context of the very same tread pattern the '332 reference provides an ample recognition of how the blocks in the shoulder rows should be configured to achieve balance across the tread pattern by having more blocks in the shoulder portion than in the center portion (see column 7, line 48 to column 8, line 18). For good reason, sipes or carving of the blocks in the circumferential center rows 3 and 4 does not exist in EP '332. The Board should note that this preclusion extends not only to the block 7 in the circumferential center row 3 ascribed to be critical by the Examiner, but also those rows which exist laterally outward, namely those in row 4. This would not be lost by one of ordinary skill.

The Examiner however, totally misconstrues the teachings of EP '332 in his analysis as the "THIRD" reason on page 17. The Examiner's conclusion is directly contrary to that taught by the reference. Only by ignoring that EP '332 states that greater stiffness results from bigger blocks but additionally, and unstated by the Examiner, that the change in stiffness desired is accomplished by the use of sipes in the shoulder portions of the block to reduce their size can the Examiner get to his end point. The Examiner's conclusion thus on page 17 is directly contrary to what the reference itself teaches the artisan.

Given this unambiguous teaching, the Examiner's "SECOND" and "FOURTH" reasons are distinctly backward, motivated by hindsight and find no predicate in the art itself. The Examiner's reliance on alleged motivations provided by EP '718 and JP '215 are ineffective by not considering in its entirety the prior art as a whole. The rejection also relies on JP '025 but fails to fully consider its teachings. As noted, that reference does show chamfering of the tips of the blocks. It also shows in the same tread pattern one in which no sipes in any way are provided. Thus, the reference would lead one of working skill to at least one conclusion that if the tips of blocks defined by steeply slant grooves are to be provided there is no need whatsoever

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for any sipes in those blocks. However, the Examiner reads JP '025 out of his analysis. But, JP '025 forms a part of the scope and content of the prior art and the then accepted wisdom of those in the field. The failure of the Examiner to fully consider that reference is by itself reversible error.

Secondly, the Examiner's analysis is also predicated on the use of EP '685. The Examiner discounts the teachings of that reference in his consideration of sipes. The reference unambiguously shows in Figure 6 that each of the blocks 12 is divided into four parts by the presence of three sipes 14 (see page 5, lines 29-32). There is no chamfering what so ever of any of those blocks. Moreover, the tread pattern also has blocks 16 denoted as side blocks. There are no sipes in those blocks. The Examiner ignores the full teachings of that reference.

The Examiner's analysis with respect to EP '718 on page 16 is also fundamentally in error. The Examiner contends that it would have been obvious to add sipes to the land portions in the Examiner's view "for improving the ground contact property of the tire and the edge effect". The Examiner however fails to consider that the '718 reference does not have sipes in all of the blocks. That is, the shoulder blocks which do not extend into the steeply slant area are chamfered at their tips but those blocks 11 have no sipes. Sipes are only formed on the land portions of the blocks 12. EP '718 thus presents to the artisan a clear contradiction between that set forth in EP '332. EP '332 doubles the number of blocks in the shoulder portion by the use of sipes. EP '718 teaches the contrary, namely sipes are disposed closer to the circumferential center line but the blocks in the shoulder portion are not in any way divided by the presence of sipes. This difference coupled with the directionality of the tread pattern provides no line of suggestion or motivation, contrary to the Examiner's conclusion in his "SECOND" statement.

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The Examiner's holding that EP '718 discloses both sipes and chamfering is overly broad and does not consider the totality of that reference.

In summary, the Appellant respectfully contends that the prior art which the Examiner has cited and applied in his statements of rejection is indeed pertinent. It represents the body of art upon which this invention is predicated. At the same time, that prior art provides a myriad of different tread patterns having different characteristics in terms of directionality, chamfering of certain blocks, the use of sipes in certain blocks, and combinations thereof. The art provides no consistent line of modification or suggestion. Only by utilizing Applicant's own disclosure and parsing it into segments has the Examiner impermissibly analyzed Applicant's claims by incorrect holdings concerning obviousness of subcomponents without fairly considering the obviousness of the claim combination as a whole. The only logical conclusion is that the Examiner has fallen into the trap of hindsight by the use of selective portions a multiplicity of references which fully considered provide no clear line of suggestion or modification. At best, they mitigate against the modifications set forth here as "obvious".

The rejections should be reversed.

Respectfully submitted,



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